

Rattenmann (F.)

INDUCED ABORTION,

ON ACCOUNT OF

EXTREME NARROWNESS OF THE PELVIS.

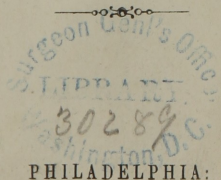
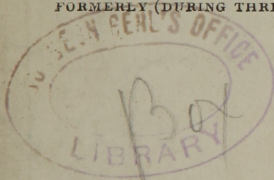
PRIZE ESSAY OF THE MEDICAL FACULTY, AT TÜBINGEN.

ABRIDGED AND PUBLISHED

BY

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TO HIS FRIEND

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MEMBER OF THE COLLEGE OF PHYSICIANS, AND OF THE ACADEMY OF NATURAL SCIENCES,

IN PHILADELPHIA.

THESE PAGES

ARE MOST RESPECTFULLY DEDICATED

BY

THE AUTHOR.

Many of our medical practitioners are still of opinion that a detailed, very special indication of the several obstetrical operations is of little or no practical interest.

Although we may not be able to draw an exact line between one and the other operation, the fact cannot be denied, that with an accurate knowledge of the separate operations, we are not so apt to commit the mistake of performing craniotomy, where nature still possesses the means of relief, or at the end of gestation to make violent efforts with the forceps, where induced abortion has been indicated in the very first months of pregnancy, by the former expedient endangering both the life of the mother and of the child.

It is not so very rare, that different operations are attempted, one after the other, in one and the same case, by physicians whose knowledge of midwifery is insufficient, without determining beforehand upon an approximatingly exact indication. Indeed it is not long, since *four physicians* assembled in this very town, for the purpose of putting an end to the pangs of a poor woman by delivery, and for *two days*, alternately, tried *one operation after the other*, but in vain; the poor creature *died undelivered*, in consequence of the lasting violent interference, whilst they comforted her with the diagnosis that she bore twins.

Already from this point of view, it ought to be important for every physician to make himself thoroughly acquainted with the different operations of obstetrics.

The first requisite for a correct indication of an operation, is a proper knowledge of the normal condition of the pelvis, and of its proportions to the foetus.

The second, is an exact idea of the separate pathological changes of the pelvis; and

The third, examinations made at different times, taking into consideration, according to the different defects, the numerous changes in the form of the pelvis, as also the changes in the position of the child, so that we may not meet with obstacles which, at last, no theory can remove.

Our intention is not to give in these pages, a critical review of all the obstetrical operations, but rather to discuss a question, which, of late, has been frequently proposed, but which has not yet been solved, namely, whether *induced abortion in case of extreme narrowness of the pelvis, is to be received as one of the obstetrical operations*, to examine the reasons for and against it, and to present the result of our labors to the criticism of a scientific world.

I am not blind to the difficulties which surround a thorough and conscientious investigation, nor to the great importance of the question, the object of which is nothing less than to banish some of the obstetrical operations which have been performed and lauded in the wrong place, and to offer to the profession a new and more advantageous operation.

Although I may aver, that in the necessary literary researches, respecting the Cæsarian section and craniotomy, I have proceeded with the utmost conscientiousness and exactness, yet I should not like to say positively, that with the literary resources, then at my command, a number of important cases, having reference to the subject, may not have escaped my notice.

Unfortunately, induced abortion has been too little discussed in the scientific world, and too few proofs are extant to enable me to add a statistical report in its favor, like that of the Caesarian section. In fact, before the year 1850, no one dared to express himself publicly and decidedly in favor of induced abortion *in cases of extreme narrowness of the pelvis*. At this time Professor Hoffman in Munich, first published his views on the subject in "die Zeitschrift für Geburtskunde, Vol. 27, XV.," which Gazeau, in the year 1852, further defended before the Academy of Paris, (Gazette d'union médicale). In the same year, in the month of November, the same question was proposed as an academical prize-essay by the Faculty of Medicine at Tübingen, and having had three year's experience in the Lying-in Hospital in Tübingen, I determined in consideration of the great importance attached to the subject, and for the sake of our poor literature, to undertake this difficult task.

However, I think that I have succeeded in proving, that scientifically induced abortion not only may be, but ought to be received as one of the legitimate obstetrical operations.

For the given demensions, the French Measures have invariably been employed. I should have gladly given the American results as well as those of Europe, but I had neither the time nor the necessary literary resources to accomplish this object, and must defer this part of the work till some future time.

For the same reason I have treated the medico-legal part entirely according to the Statute-Law of Germany.

Finally, I request, that my labors may be judged with indulgence, but should they, notwithstanding, fall into hands of individuals, opposed to my views, and be treated with scorn and derision, I shall comfort myself with that magnificent idea, which Seneca expresses in his "De remediis fortuitorum," and with which I also close, namely: Male de te opinantur homines. Sed mali — moverer, si de me Marcus Cato, si Lelius Sapiens, si alter Cato, si

duo Scipiones, ista loquerentur. Nunc malis displicere laudari est. Non potest ullam auctoritatem habere sententia, ubi qui damnandus est, male de te loquitur. Male de te loquuntur. Moverer, si iudicio hoc facerent, nunc morbo faciunt. Non de me loquuntur, se de se male de te. Bene nesciunt loqui, qui faciunt non quod mereor, sed quod solent.

Quibusdam enim Canibus sic innatum est, non ut non proferitate sed pro consuetudine latent.

Est modus, in rebus, sunt certi denique fines,
Quos ultra citraque nequit consistere rectum.

HORAT.

With the fact before us, that a certain obstetric operation, which was brought over from England to France and Germany, found so little favor, that those who first practiced it were accused of actual homicide, as *without examining it*, the induction of premature labor was called, and were condemned as complete monsters, might it be considered precarious to defend *artificial or induced abortion*?

It is, no doubt, a delicate matter boldly to defend an operation, by which the foetus is expelled from the uterus, before it is viable. Yet it seems to lie in the nature of things, that exceptional cases may occur where the life of the foetus must be sacrificed during the first six months.

The proof that it *must* be lawful, intentionally to destroy the principle of life in the embryo, is the main point on which turns the following question:

May the Physician induce abortion in extreme cases of narrowness of the pelvis, and must he do so where even embryotomy is no longer practicable, to save the mother from the dangers which threaten her life under the Cæsarian section?

To determine the distinction of the expressions, *induced premature labor* and *abortion*, as used in this treatise, we think it necessary to premise the same by a more exact definition of the character of these two operations.

When the accoucheur prepares for *induced premature labor*, his object is to bring into the world by artificial means a living child, and at the same time to spare the life of the mother, thus to save *two* beings. On the other hand, the accoucheur who *induces an abortion*, intentionally sacrifices a growing life, to save the mother from an operation which generally proves fatal.

In the two cases, the Cæsarian section and abortion, although the intentions differ essentially, the results are nearly the same; in the former the mother, as we shall prove hereafter, in the latter the child is sacrificed.

If, therefore, besides the fatality of the Cæsarian section, we could once prove the value of abortion in saving the life of the mother, the question as to its legality would, no doubt, be set at rest. The decision as to the importance of saving the life of the mother, rather than the doubtful life of the embryo, will be treated of more specially in the moral and legal parts; here we shall only examine which course, in a *medical point of view*, is most justifiable, and try to determine, how the accoucheur or physician is to act where the pathological condition of the pelvis in the organism of the mother (extreme degrees of the narrowness of the pelvis) will *not even* admit of the escaping of an *immature fœtus*, much less allow the possibility of a mature child passing through the straits of the pelvis.

That induced abortion must be lawful, we shall deduce from a case, which would require, either *one* victim, the mother, by means of the Cæsarian section, or *two*, both mother and child, in consequence of the exhausting efforts during parturition.

To enable us to enter into the details of the subject, it seems requisite that we should first show the extreme limits of the *dimensions of the pelvis*, that we should give some account of the *dangers of the Cæsarian section*, and of the statistics of its fatality; nor must we omit to glance at the proposed *craniotomy* of the child, and to consider the dangers to which the mother is exposed in the different attempts of saving the child, if we wish to prove satisfactorily *that induced abortion, in a medical point of view*, is justifiable.

Without enlarging too much on the measurement of the pelvis, I shall merely premise here, what I consider absolutely necessary, and shall then enter upon the consideration of those proportions of the pelvis, which will justify the induction of artificial abortion, (this justification to be derived from the previous general examination of the pelvis.)

Knowledge and practice in manual and instrumental measurement of the pelvis, are absolute requisites for every one who

wants to offer an opinion, respecting the necessity of any of the larger obstetrical operations. We find however, in medical literature a not inconsiderable number of persons, who not only deny the value, but even the possibility of an exact measurement of the pelvis; some of these were Mauriceau, Van der Sterre, Cranz, Bôer, Hamilton, &c.; and at present, Klein in Vienna, Joerg in Leipsic, Scanzoni, and others. Though it may not be necessary, and generally is not possible, to obtain a measurement of the pelvis, correct *to a line*, this is no reason why a measurement which may be approximately correct, should be rejected; besides, the above-named opponents of pelvimetry do not hesitate, after having performed the Cæsarian section or craniotomy, to give the measurement of the pelvis with the greatest certainty. These however, are revelations, which, no doubt, are intended to increase the fame of the successful operation.

We cannot establish *positive scales*, whether the one or the other operation is to be performed, according to the results of the measurement, but the artificial aid must be applied according to actually existing circumstances; and, as we see from the statement of Prof. Hoffman, in Munchen, (*Neue Zeitschrift fur Geburtskunde*, vol. 27, XV,) who was obliged to perform craniotomy, when the conjugate diameter was 4 in., we must, by no means, neglect to take into consideration the volume of the embryo. For in this case, which, to judge from the proportions of the pelvis, would not have justified any operation, Hoffman lost both child and mother, and was obliged to confess that the Cæsarian operation must have enabled him to save at least *one* of the two. In other cases where no notice was taken of the frequently attempted scales of the necessity of the different obstetrical operations, the life of the foetus as well as that of the mother was preserved, by not only measuring the pelvis, but also taking into consideration the size of the child. Thus Professor Breit, Principal of the Lying-in-Hospital, at Tubingen, preserved, by premature labor at the proper time, the child of a woman in her third confinement, whose two former children had fallen victims to clinical art. The pelvis was nearly in a normal state, but the foetus was immense.

We shall here give the details of this interesting case.

CHRISTIANA LINDANER, 26 years of age, robust, and of middling

size, menstruated for the first time in her 18th year, in 1849, and again in 1850, was delivered by means of the Forceps, on account of disproportion between the pelvis and head of the child, (the child weighing 9 lbs.,) of a dead full grown child, in the Lying-in Hospital, at Stuttgart. When in 1852 she presented herself for admission at the Lying-in Hospital, at Tubingen, the report of her pregnancy was as follows:

Last menstruation, April 13th. Conception, April 21st.

The pelvis was examined by hand and by instruments; the result was as follows:

a. External measurement by instruments, (Baudelocque's callipers.)

Diagonal conjugate diameter, 6" 7"

Height of symphysis, 2"

b. Internal measurement by hand.

Diagonal conjugate diameter, 3" 11"

c. Internal conjugate diameter, by instruments.

(Kiwisch,) . . . 3" 4"

(Breit,) . . . 3" 4"

In consequence of these results, the artificial premature delivery was superinduced in the 36th week, and on account of a cross position of the child, it was turned on its feet, and the head which came last, was delivered by hand.

Weight of the child, . 7 lbs.

Transverse diameter, . 3" 9"

Length, . . . 17" 6"

Whilst in child-bed, no re-action; mother and child saved.

The history of another case is not less interesting.

SALOME KEGREISS, 32 years of age, rachitic, of a low size, menstruated for the first time in her 21st year, first pregnancy, was admitted on the 13th of November, 1852.

Report of pregnancy:

Last menstruation, May 8th. Conception, May 16th.

a. External measurement of the pelvis with Baudelocque's callipers.

Diagonal conjugate diameter, 6"

b. Internal measurement by hand.

Diagonal conjugate diameter, 3" 6'''

c. Internal instrumental.

(Kiwisch,) 3" 1'''

Induction of premature labor between the thirty-sixth and thirty-seventh week, with *spontaneous* expulsion of the child.

Weight of the child, 5 lbs. 10 oz.

Transverse diameter, 3" 6'''

Length, 16" 9'''

The child lived, but the mother died on the 5th of March, five weeks after delivery, of nephritis. Measurement of the pelvis confirmed at dissection.

Also, the result of a third case, deserves to be mentioned here.

CHRISTIANA WÆRNER, 36 years of age, of medium height, menstruated for the first time in her 14th year, had already given birth to three children, every time turning, and the forceps had to be resorted to, the second and third time by superinduction of premature delivery; all the children died. She was admitted, on the 21st of September, 1852, into the Lying-in Hospital, at Tübingen.

Menstruated last, May 20th. Conception, May 31st.

Results of the measurement of the pelvis:

a. External measurement with Baudelocque's callipers.

Diagonal conjugate diameter, 5" 9'''

Height of symphysis, 2"

b. Internal.

1. Manual—

Diagonal conjugate diameter, 3" 6'''

2. Instrumental—

By Breit's Pelvimeter, 3"

Kiwisch, 3" 1'''

Superinduction of artificial premature delivery, in the beginning of the thirty-seventh week; spontaneous expulsion.

Weight of the child, 4 lbs. 24 oz.

Transverse diameter, 3" 1'''

Length, 17"

Mother and child both living; no reaction whatever.

From the last three cases, stated above, of which we find many similar ones in medical works, we can, unconditionally, estimate the value of the measurement of the pelvis, in general. But, however great the advantages of this measurement may be, it cannot be determined with minute accuracy. Independent of the fact, that the very accurate measurement of the pelvis can only be performed by persons who have had great practice, so much depends in special cases upon the different proportions, that no great interest attaches to the following literary notices.

The English school performs craniotomy at a narrowness of $1\frac{1}{2}$ in. Osborn (*Versuche über die Geburtskunde*, 1794, p. 351, 356,) craniotomy performed to 1 in.

Craniotomy, with a pelvis of only $1\frac{1}{2}$ in., has also been successfully performed in Germany, (Wigand *Geburt des Menschen*, Berlin, 1820, vol. 2., p. 51); and Michaelis, (*Neue Zeitschrift für Geburtskunde*, vol 5, III, p. 7, 26.)

According to Busch¹ and Moser² the narrowness of $2\frac{1}{4}$ " to less than 3", at the smallest diameter, when the foetus is dead, indicates craniotomy; when alive, the Cæsarian section. (Conf. above p. 9. Woerner, with 3", induced premature labor without any operation.) A narrowness less than $2\frac{1}{4}$ ", makes craniotomy or the Cæsarian section absolutely necessary.

Hoffmann (*Neue Zeitschrift für Geburtskunde*) considers that degree of narrowness of the pelvis as the extreme limit, where, not even a premature and dead child, much less a full grown child, can pass through the straits of the pelvis, neither diminished nor undiminished; and in this case, insists on the Cæsarian operation, or on abortion.

Otherwise, they consider, in Germany, according to Kilian, in his "Operative Geburtshülfe, vol. 1, p. 740, Bonn, 1834," *ceteris paribus*, $2\frac{1}{2}$ in. as the minimum for craniotomy; whilst a smaller diameter requires *Cæsarian section* or *abortion*.

According to Professor Breit, (clinical lecture of the 7th December, 1852,) craniotomy with less than $2\frac{1}{2}$ in., is only practicable in very rare cases, and then equally as dangerous as the Cæsarian operation. In such cases the measuring of the pelvis is, of course, very easy.

(1) and (2) *Kaisergeburt*, Band III.

With deformation of the pelvis, whether it reaches the utmost degree, or is more limited, circumstances have always been cited, that were to make the removal of the difficulty possible. The *efforts of nature* in the preservation of mother and child, have been particularly alluded to. Paré, Pineau, Van Swieten, Hunter, Morgagni, Diemerbröcke, Desault, Haller, Chaussier, Arnold, Bégin, advocate the idea, that nature finds the means of enlarging the pelvis, in its synchondroses and ligaments, the phlogistic condition of those organic tissues having the power of softening, and making more ductible, the ligamentous and cartilagenous connections, and thus to enlarge the diameter of the pelvis. More of this will be found in Dr. A. Gmelins Dissert inaug, Tubingen, 1854.

Bégin is particularly attached to this idea, he says, in the French Journal, (Union Médicale, p. 136, No. 33, 1852,) „Si l'on „est certain qu'une mensuration du bassin, faite a trois ou quatre „mois du terme de la grossesse, puisse toujours faire prévoir „d'une manière absolue, ce qui viendra cinq ou six mois plus „tard; n'y a-t-il pas dans la mensuration même du bassin, relativement a ses formes, des causes d'erreur, difficiles à éviter, „lorsqu'on n'a pas une grande habitude de l'opération? N'y „a-t-il pas à se préoccuper des changements que pourront éprouver les symphyses pelviennes de la ductilité de la tête du fœtus „de la possibilité de provoquer, avec des chances de succès, l'accouchement aussitôt qu'il aura acquis les conditions de viabilité „rigoureusement nécessaires?“

Without noticing that in many cases, ossification of the fibres, doctile according to the above authors, excludes all idea of softening the ligaments, and thus prevents an enlargement of the pelvis, it is sufficient, when we find on examining the medical works for centuries back, that our confidence in the assistance of nature is not justified. The annals of all times, where the progress of science would induce us to expect discoveries in physiology and anatomy, show as few cases, as cases are known, in which nature, by means of *osteomacia* or the softening of the bones, has proved its efficacy. One of these rare cases, the Tubingen Lying-in Hospital is fortunate enough to have on its records, namely, a softening of the ligaments of the symphysis pubis to 8", which circumstance was not discovered until at dissection.

The assertion that the softening of the pelvis may be so much increased as to facilitate the act of parturition, can *only* apply to *anomalous* cases.

But these instances of our experience will not justify us, in cases where we know before hand that the passage of even an immature child will be impossible, to wait and see if nature will succeed in performing the above masterly operation. By this delay we should, undoubtedly, lose the most precious moments, and if nature should leave us in the lurch, as might be expected from her former proceedings, the sacrifice of mother and child would be most probable and most inexcusable.

If all the accoucheurs, or even the majority of them, had been so timid as to persevere in trusting to the *softening of the pelvis*, or so forbearing, if we want to ascribe this trustfulness in nature, to the moral sentiments of its adherents, two other obstetric operations, the *Cæsarian section* and *craniotomy*, would not only never have flourished, but would never have seen the light of day.

Fortunately, enterprising minds attempted to present, energetically and with certainty, the consequences of these unnatural dimensions of the pelvis. Yet, not until the thought accidentally struck Nufer, a Swiss, (1500,) to try the Cæsarian section upon his own wife, therefore upon a living subject, and that this daring undertaking was attended with success, did this extraordinary invention of one who might be called a scientific botch, make its way into the world. But, as is too often the case with new inventions, this one also led to great abuses. We have only to look at Kilian's Note, (I vol., p. 790,) where Scipio Mercurius relates, that it was said, that at the time of Rousset, the Cæsarian section was as common an operation, in Italy, as bleeding; nay, that there was a time, when the Cæsarian section was considered the masterpiece of the profession, and that a surgeon could not expect to succeed until he had performed that operation; certainly a sad picture of its abuse.

Our century, in its progress, may boast of having banished the inconsiderate and too frequent use of the Cæsarian section. At present, medical men know and consider too well the dangers of this operation, which in certain cases, if we judge without prejudice, we cannot but applaud. For there are cases of extreme

narrowness of the pelvis, where the indications are against craniotomy and to save mother and child nothing remains at the end of gestation but the Cæsarian operation. Our medical works contain a sufficient number of cases which show a successful termination of this operation. Thus the physicians of Aix la Chapelle state to have been successful in seven cases out of eight. Particularly striking is what Michaelis reports on this subject. In 1836 he had performed successfully for the fourth time the Cæsarian operation on the same individual, (one Adamez.) Some boast, but without giving any proofs, of having successfully performed the Cæsarian section seven times on the same individual. Dr. Sonneck at Brugge, for instance, pretends to have done so seven times to his own wife. Bartholin, Tizing, Roonhuysen, Raynaud and Rousset speak of cases, where the same woman safely underwent the operation from five to six times. A case, which occurred in the Lying-in-Hospital at Tübingen, makes the assertion, that the same individual may safely undergo this operation as many as seven times, less improbable.

The same Mrs. Wœrner, of whom we stated, p. 13, that with a diameter of the pelvis of 3", premature labour had been induced three times, went through the necessary treatment with great ease. In the winters of 1849—50, 1851—52, 1852—53 the delivery was induced by uterus douche, 17 sessions in five days, of from a quarter to half an hour each, repeated daily twice, afterwards three times, and at last four times, besides applying half baths or sitz-baths. At the last birth, all these were not able to produce the slightest labour pains. At last the sponge was applied for nine hours and produced the desired effect. All these applications Mrs. Wœrner bore without any reaction threatening her organism. It is moreover interesting to state, that in the summer of 1851 the same woman underwent a resection of the upperjaw by Prof. Brunns, and that during this operation, though not labouring under narcosis, she did not show any signs of suffering pain from the operation, but on the 17th day left the hospital perfectly cured, without any subsequent symptoms. (Extract from the clinical Journal.) A peculiar invulnerability in certain individuals, particularly in those affected with rachitis, according to the above case, can scarcely be denied, and in reading

the reports of Michaelis, we might almost be induced to suppose, that he had been fortunate enough, to have had to operate on such invulnerable subjects. At any rate, we must allow, that these Gentlemen who state that they have seven times performed the Cæsarian section, have been extremely fortunate, for on the other hand, the remaining medical reports show results very different from the few cases stated above.

We here introduce a statistical table, observing that it is only formed from printed cases, without their correctness being vouched for by witnesses.

Period.	Referree.	Number of Cæsarian Sections.	Mortality died		Number of Mothers saved.
			Mothers	Children	
Since the Memory of man	S. Cooper & Burns in England	all	all	?	none
1750—1810	Kayser in Copenhagen	337	210	86	127
1810—1832	do.	100	69	?	31
1832—1839	do.	100	33	?	67
1839—1850	Dr. A. Chereau (Union méd.)	47	40	?	7
1839—1843	M. Goodman (Brit. obstetrical Record, T. I.)	37	33	?	4
1839—1854	Prof. Breit	110	52	30	58
Since Bauhin, in the Hotel-Dieu.	Tenon	70	70	?	none
Total		801	507	116	294

In England, therefore, since the memory of man, all Cæsarian sections have turned out fatally for the mother, and Paré, Guillemeau, Mauriceau, Dionis, Peu and Soling and particularly De la Motte declare that *the Cæsarian section is an operation fatal for the mother.*

According to Joerg¹⁾, and Hussian²⁾, the proportion of fatal
Cæsarian sections is as 20 : 1

According to Metzger 49 : 1

According to Bush³⁾, Kluge⁴⁾, Velpeau⁵⁾, Michaelis⁶⁾ 1 : 3-4

According to Osborn⁷⁾ and Wilde⁸⁾, of 10, 9 died.

According to Boër⁹⁾ and Dugès¹⁰⁾, of 14, 13 died.

According to Professor Breit not a single Cæsarian operation has been successful in Vienna or Paris during the present century. (Journal of the Lying-in-Hospital in Vienna.)

If we suppose that the horrid fatality which we have just mentioned, may in part be attributed to the particular circumstances, in which we find the inhabitants of the hospitals of large cities, and that the results in the country are much more favorable, we obtain notwithstanding, when we consult all the authenticated cases, the certainty that of a 100 women, who undergo the Cæsarian section, 70 fall victims to the operation.

Suppose the same trouble had been taken to publish the unfavorable results as the favorable ones, still their would be four victims out of five as our statistical table shows. But this latter cannot be looked upon as a correct criterion, for, if the fatal results of this operation had been recorded as faithfully as the successful ones, the ratio, no doubt, would have been very different. In this respect we may well agree with Nægele (*De jure vitæ et necis, quod etc.*, Heidelberg 1826), with Janouli, on the Cæsarian section and craniotomy, Heidelberg 1834, Wilde p. 108, as with several others, who assert that the greater number of Cæsarian operations which are kept secret, have resulted fatally. Nægele (p. 7) mentions 16 unsuccessful cases, Wilde (p. 109) 7, which had never been described.

1) Handbuch der Geburtshülfe, III, 499.

2) Handbuch der Geburtshülfe, III, 215.

3) Kaiserschnitt, Vol. III.

4) Siebold's Journal, Vol. VII.

5) Union médicale, P. 74.

6) Neue Zeitschrift für Geburtskunde, V, H. I, 25—27.

7) Versuche über Geburtshülfe, 161—180.

8) Gebärunvermögen, 150.

9) Natürliche Geburtshülfe, I, 167.

10) Dictionaire de médecine, etc. Vol. 5, 166.

In the work of Düntzer, "Die Competenz des Geburtshelfers über Leben und Tod etc.", Cologne 1842, p. 9, we certainly find an oponent to Nægele's and Wilde's views. Düntzer gives here a criterion of the efforts of our time. What has often happened in former times and what has been proved, namely the secreting of an unfortunate operative treatment, he calls narrowmindedness which lacks intelligence and suffers from egotism; the present time he describes in an amusing, poetical phrasiology as the "heros" which, from the labyrinthian confusion of its scientific carrier, has at last discovered the thread, and will thereby solve the great problem of the perfection which is to be attained.

We shall omit to examine, how far we should be justified in flattering our time with possessing this extraordinary talent. At any rate it has been proved that in our time, the Cæsarian section is performed less frequently but more considerately, less frequently than formerly, because the application of this dangerous operation is confined to cases in which every other remedy is entirely impossible. If under this, I might say, more rational method, we look at the results and compare them with those of the times when Cæsarian operations were made for the sake of fame, we shall find that they are more favorable now, particularly, if we except Michaelis' luck and Kayser's description which may be called exact. The reports of the latter may be looked upon as analogous to the results of our own times, as it is more than probable that, even if Kayser did not exactly suffer from the mania of publishing only favorable results, he may not have been able to hear of all the cases. This refers particularly to the above mentioned cases, which according to Nægele and Wilde had never been published in any medical reports.

As to the danger of the Cæsarian section, our time still deserves the reproach that unfavorable results are too often the consequence of operatively interferred too late, a circumstance which, it is true, is mostly attributable to the unfavorable circumstances of the lying-in woman.—We must in this respect confess with Velpeau (*Union médicale* p. 74) that the results would become more favorable, if, instead of allowing the woman to exhaust herself by struggling in vain to overcome an unconquerable obstacle, and to try manœuvres which must necessarily miscarry,

the operation were performed either before or soon after the breaking of the waters. For it cannot be denied, and it is fully proved by the cases reported in medical works, that mortality increases, the more time we allow to elapse between the breaking of the waters, and the operation. It is not necessary to show that the exhaustion of the mother, in delaying the operation, cannot be favorable to her, when we consider that the woman will only concur with us, when she herself is convinced of the uselessness of her vain exertions and the inefficacy of all obstetric manœuvres.

But how is the foetus in the uterus effected by the delay? The instances which we extract from Kayser, from the "union médicale p. 74," are a striking proof of the injury which must result from it to the foetus. In his report he says; Of 37 cases in which the operation was performed, either before or within six hours after the breaking of the waters, only 3 children died. When the operation was performed from 7 to 24 hours after, of 37 children 7 died. When operated upon 24 hours after, half the children were sacrificed. We should consider these results and also remember, that according to general experience, one half of these children die before the 30th year. According to Villermé (Journal union médicale p. 75) there died in France:

I. *In the first years of life:*

a) rich Departments	20%	} according to others }	foundlings
poor do.	22%		
		even 80 to 90%	60%

II. *In the fourth year:*

a) rich Departments	31%
b) poor do.	33%

III. *In the twentieth year:*

a) rich Departments	42% and upwards.
b) poor do.	50%.

Besides this the child may die before the accoucheur is called in as operator, a circumstance by which one third of these children perish.

Those, who like Bush and Moser, lay it down as a principle, that mother and child have equal rights, must exhaust all the means which experience and science offers them, to enable

them to determine exactly by what proceeding the larger number of human lives, no matter, whether mother or child, can be saved. These authors therefore say :

"To form a judgment, we take as basis a sufficient number of "births, each of which embraces two lives ; we now see how many "lives were saved by the one or the other proceeding ; in special "cases we try to judge under what circumstances this took place, "and according to these circumstances we determine the indi-
"cation."

That this cannot be a leading principle is clear, when we consider that *the life of the mother and that of the child cannot be of the same value*, as we shall show in the medico-legal part.—If by our systematic exhibition p. 18 we have proved the dangers of the Cæsarian section are there no other means of saving the mother than by the above operation.

The art of operating simply indicates *Craniotomy*, where it can be performed. For *Symphyseotomy* (Sigault) and *Pelviotomy* (Galgianti) at present, may be considered as generally and properly obsolete.

Regarding craniotomy, much has at all times be argued pro and con ; some not wanting to allow this operation to be performed unless the child be certainly dead, whilst others will not hesitate to sacrifice the child for the sake of the mother. The former, who will absolutely operate upon a dead child, try, before they perform craniotomy, a long series of manipulations, which are as good as fatal to the child. For, what are the methods of Osiander Dease, Steidele, Stein, Boër, Siebold, Klein, Ritgen, Jærg, who make as many as 175 violent attempts with the forceps, other than experiments, to which the foetus must inevitably succumb ? Osiander the elder, in his "Neue Zeitschrift" vol. I. p. 99, rejects craniotomy even in a dead foetus, but for very strange reasons. "For," these are his words, "we must even avoid the appearance of a homicide, and not by horrid, destructive operations deprive the healing art of its merited consideration, bestowed upon it, because its object is the preservation of human life." He, therefore, rather than have recourse to craniotomy, would perform the Cæsarian section, or let the woman die undelivered.

Osiander cannot persuade himself, to favor craniotomy at all ; for this operation appears to him too cruel, nay so horrible, that he

considers it less cruel, to let the mother die undelivered, or to expose her life by the Cæsarian section.

Bush and Moser (Vol. III p. 111) are in favor of craniotomy of the living foetus; they are guided by this simple reasoning, that if we wait until we have the certain symptoms of death, that is until the child has perished in consequence of the vain efforts at parturition, we also endanger the life of the mother by the attempts with the forceps which precede the operation of craniotomy.

For the results of craniotomy let us refer to our literary resources.—Professor Breit in his clinical lectures 1852, states that of 55 cases, which he had collected, 33 mothers died, and only the smaller remainder was saved.

According to Hamilton (p. 251) of 50 operations, performed during a century, only 5 or 6 mothers lived after the operation.

Under Baudelocque, during 15½ years, whilst at the “Hospice de la maternité,” half the mothers, fell victims to craniotomy. (*Revue médicale française et étrangère et Journal de Clinique.*)

Riecke's “*Beiträge zur geburtshülflichen Topographie.*” Wurtemberg 1827, shows a mortality of 31 mothers for 84 operations of craniotomy.

Moser and Bush (l. c. Vol. IV p. 143) state that in the Lying-in-Hospital in Berlin, of every 6 mothers, four died in consequence of craniotomy.

The following accoucheurs were more fortunate according to Osborn (*Versuche über die Geburtshülfe*, Liegnitz 1794, p. 351 to 356) of 50 women only 4 or 5 died. According to another part of the same, of 11 at most only 2 died, Wilde is of the same opinion.

Wiegand (Vol. II, p. 51), who had frequently practiced craniotomy, and Michaelis (p. 7—26), who even with a conjugate diameter of 1½ in. performed craniotomy, know of no case where the mother lost her life.

D'Outrepoint also performed this operation seven times, without the mothers meeting with any accident.

Also in the clinic of the Lying-in-Hospital in Tübingen a case occurred in 1851, which resulted favorably, and which, as I hap-

pened to be engaged in it myself, I shall describe somewhat more fully.

CATHARINE FUCHS, 32 years of age; robust, small, had menstruated for the first time in her 15th year; first pregnancy; was admitted on the 20th November 1851. Last menstruation on the 6th April; conception on the 11th April.

External measurement of the pelvis (Baudl.) Diag. Conj. 6"

Internal measurement by hand do. do. 3" 7'''

Ankylosis of the os coccigis existing.

Induction of premature labour by the uterus douche. She had 40 sessions of 15 minutes at \pm 30° R. rising to 40'. Beginning of parturition on the 13th day after the first session, head protruding on the brim of the pelvis, 5 hours after the breaking of the waters, the head in the os uteri, so that the latter could not be felt, considerable swelling of the head, distinct, foetal pulsation. The forceps were applied and eight strong pulls were given, but without success. In accordance with the condition of the mother, she was allowed to rest.

Half an hour after, attempts with the forceps, the foetal pulsation becomes gradually weaker, and ten minutes later disappears altogether. After this, perforation of the descending head by Kiwisch's perforator. The whole operation was terminated in about ten minutes.—A quarter of an hour after delivery, trifling vomiting which yielded to Pulv. aërophor. As early as fifteen days after parturition the woman was able to leave.

Craniotomy, others assert, is only permitted when the physician is perfectly convinced, that the child *has ceased to exist*. To this we may reasonably object:

Who can assert with perfect certainty, that and when the life of the child is exactly extinct? Whilst we delay and hesitate not to commit a homicide on the child, we increase the danger of the mother more and more; and what is the difference between killing the child quickly by craniotomy, or delaying the operation and torturing the child to death by the violent exertions of the mother.

F. C. NÆGELE (Dissertat. de jure necis et vitæ, &c.) in a few words directs our attention to this point: *Haec (mater) enim aut directo inflammatione, gangræna aut ruptura uteri enecari potest, aut fit, ut perforatio porro instituta letalis eveniat.*

Baudelocque the nephew (Journal de l'Hotel Dieu,) in cases where craniotomy is to be avoided, or where after perforation the volume of the head is still too large, wants the *cephalotribe* to be applied. He states, that it is said, that even where the diameter of the pelvis was only 20'', this operation has been successful. But even where this pretended life saving operation of cephalotripsy was performed, out of 50 cases collected by Baudelocque, Kiwisch and Breit, 18 mothers died. Besides this, the *cephalotribe* cannot be applied, when the pelvis is less than $2\frac{1}{2}$ '', as the statement of Dubois, who avers, that all mothers perish under this operation, will easily demonstrate. According to Professor Breit, who agrees with Dubois in denying the use of cephalotripsy, when the pelvis is only 20'', the clumsy *cephalotribe* has the disadvantage that its application is always very difficult, as we can only use two fingers in introducing the instrument. The use of this instrument is still more precarious on account of its frequently slipping, and the bruising of the soft parts of the pelvis, by which this operation is always accompanied, and which may induce fatal consequences. Of course the Cæsarian section may also be avoided by the *cephalotribe*, particularly, if after unsuccessful craniotomy, we will and must sacrifice the child.

Cephalotripsy is undeniably a useful operation, when in cases, where the head descends last, it is indicated together with perforation, and then it is undoubtedly preferable to the latter operation. Lately, since the perforator of Kiwisch has come into general use, craniotomy is less dangerous.

Finally, what are we to make of Oslander's manipulations of the forceps and of the frequently proposed *turning*, as also of the *cure by starvation*. The application of the first is impossible in cases where the narrowness of the pelvis is extreme; and the latter remedy would most likely fail altogether, as experience shows us, that the foetus in its development seems to take but little notice of the diet of the mother; for very often women who are in poor circumstances, bring forth stronger children than those who are well fed. Nay even six months' vomiting, which cannot be stopped, seems not to prevent the pregnant woman from bringing into the world, strong and well fed children. The founder of natural midwifery, Boër and his adherents, want us to rely upon natural

labour, before we enter upon an operation. Boër speaks of cases, where the transverse diameter of the head was 2" 6" to 8", the longitudinal diameter nearly 8". Baudelocque gives a transverse diameter of 2½" to 2¾"; Solayrez the transverse diameter 2½" and the longitudinal diameter 8"; but these cases are too rare to induce our trusting to nature on all occasions. Besides we do not consider it justifiable to expose a woman in labour, for days, to the most violent pains, and after all her sufferings to have to tell her, that in waiting for help from nature, the time for any operation has passed by.

Long since, in cases where from pathological causes, craniotomy, or for circumstances to be explained hereafter, the Cæsarian section was impossible, the importance of abortion has been understood. In periodicals and other works, abortion has pretty often been the object of scientific discussion, so that at present we find the following articles entirely devoted to this subject.

An liceat medico pro salute matris abortum procurare? Samuel Herzog, Tübingen, 1697.

W. Cooper. Medical Observations, 1771, vol. IV. p. 261.

P. Scheel, Commentatio de liquor amnii — natura et usu, 1799, p. 74.

Mende, Beiträge zur Prüfung ärztlicher Meinungen, vol. I, p. 64.

Nægele de jure vitæ et necis, etc. Heidelberg, 1826.

Hoffmann, Neue Zeitschrift für Geburtskunde, 1827, vol. XV. p. 148—199.

Cazeaux (Lénoir) union médicale, vol VI. p. 18.

Dubois, Clinical reports.

Yet these literary sketches do not furnish us with any positive guiding principles, and he who determines upon abortion, looks in vain for such. To this day we have not yet advanced so far, that every physician might unconditionally shape his conduct by precedents, in referring to certain cases as examples. We shall therefore try to prove that abortion must be permitted, and in what cases and under what conditions. For this purpose we shall select a special case.

Let us suppose that we are consulted in the first months of pregnancy by a female, who herself is already frightened on account of deformation of the pelvis. On examination we find a narrowness of the pelvis which makes all obstetric operations impossible, with the exception of

the *Cæsarian section*. It is our duty to tell the patient that she will not be able to bring a child into the world, without allowing the *Cæsarian operation* to be performed, but we are also bound to direct her attention to the dangers of this operation, and the female declares most positively that she will never submit to this operation.

If we state that we find a narrowness of the pelvis which allows of no obstetric operation except the *Cæsarian section*, the objection might be made, that it is altogether impossible to judge so positively of the dimensions of the pelvis. That such a determination of the dimension is not easy, where it depends upon the extreme limits of the pelvis, we think we have already proved, p. 14, that with a diameter of $2\frac{1}{2}$ " the danger of craniotomy and of other instrumental manœuvres, which in fact can no longer be performed successfully, is so great, that we are obliged to have recourse to the *Cæsarian section*; and we need not repeat here, that in such cases, craniotomy is more dangerous than the *Cæsarian operation*, as we have already mentioned the subject, p. 23, to which we refer.

To get easily and pleasantly out of this difficulty we have only to follow the advice of Kilian (Vol. II p. 280), which is to desert the mother, meaning to let both mother and child perish without interfering.¹⁾

Osiander intends to leave the mother, or absolutely force her to submit to the *Cæsarian section*.²⁾

Wilde (l. c. p. 263) blames and opposes this inconsiderate

¹⁾ The words of Kilian are : "When the accoucheur has exhausted all allowable means of persuasion, it is his duty to leave the mother, who refuses to submit to the *Cæsarian section*, without doing anything further."

²⁾ Osiander (Handbuch der Entbindungskunst, Vol. II. Part 2, p. 325): "The question, which has been mooted lately, whether a pregnant female could be forced to submit to the *Cæsarian section*, and which many have thought it necessary to answer humanely in the negative, becomes therefore superfluous; yet it should have been answered in the affirmative. For the mother has no right to dispose of the life of her child, she can neither say cut up the child in my womb, nor let it die there; on the contrary, as a mother, she is obliged to do, allow all to be done, that might be conducive to save the child and herself. If therefore, she will not listen to reasonable argument, she should be looked upon as a child, or as an idiot, whom we force, and are bound to force to operations against their own will."

method, and although Kilian is a pupil of Osiander's, our time has abandoned this cruel manner of treatment, the general opinion being that the duty of an accoucheur is, to assist, and not to abandon a pregnant female.

To wait for the rare interference of nature, which in cases of extreme narrowness has *expelled the badly developed fœtus very early*, is an idea that can only be applicable up to the time where the induction of an abortion is still possible. For if we wait for a spontaneous abortion, until the fœtus has considerably increased in volume, we must have recourse to the Cæsarian section to save the mother and the child.

But the case, in which we shall prove the necessity of abortion, is, where the mother *refuses absolutely to submit to the Cæsarian section*.

Düntzer, who cannot deny the great danger of the Cæsarian section, instead of conscientiously exposing the dangers of the operation, wants the physician to deceive the woman and gives the following advice: "Let it be a rule not to point out to the patient, too early, the necessity of the Cæsarian operation, in fact, not until from the slow progress of labour, and an inward impulse, the wish to see it terminated increases with every minute, and the longing to be released, becomes more and more urgent. At this moment, when her mind is oppressed and unable to reason, she will seize with confidence, as the only hopeful means, even this worst and most dangerous remedy, which when cool and collected, she would have rejected with fear and horror. During this time of increased longing and impatience, should we not, by powerfully exciting the sensibility of the mother, find in her moral strength and self-sacrifice, a powerful protection against the very dangers of the operation?"

Independent of the evident absurdity of this view of Düntzer, we might remind this adherent of the Cæsarian section, that most the unfavorable results of the operation have been caused by *delay*, and that it must fail, when it is performed upon an exhausted patient.

Velpeau, far from wishing to deceive the mother in the manner of Düntzer, considers the recognized dangerousness of the Cæsarian section as exaggerated, but admits that the *consequences* are

always very doubtful. By this means, however, the description which the physician has to make to the mother of the dangers of the operation, is not materially altered, for it is of no importance to her whether she is to die during the operation, or from its effects. It is true, experience teaches us that the Cæsarian section is by no means an operation not endangering the mother. But suppose this was the case, could we make use of it, if, as taken for granted in our hypothesis, *the mother refuses positively not to submit to it though it were without any danger.*

For, although on paper the prognosis of the Cæsarian section may be as 4 is to 5, *for the uninitiated death and Cæsarian section are yet synonymous*, and mothers will resist this operation in almost all cases, though Kilian may call such mothers unnatural.

There is still less truth in Kilian's statement (Operat. Geburtshülfe, p. 820,) by which he intends to prove that we have no *denial* to apprehend, no *refusal* to expect on the part of the mother; such an opinion is contrary to all the experience of a number of accoucheurs, of which Wilde mentions Stein, Mende, Richter, Mole, Schneider, Schürmayer and Hergt, and consistently adopts their views.

For the reason that the mother invariably resists the Cæsarian section, we have so far tried to justify the induction of abortion as a matter of necessity. We have now to examine whether this induction of abortion is not quite or nearly as dangerous as delivery by means of the Cæsarian section. Hitherto it appears, that we have not dared to receive the induction of abortion as one of the obstetric operations, and only because we had no cases of precedent to guide us. Thus it happened, that this operation was altogether limited to those cases where disease threatened to kill the mother, if the embryo was allowed to exist any longer. On the contrary, in extreme narrowness of the pelvis, physicians were always ready with the Cæsarian section. In those diseases which would absolutely destroy the life of the mother, the induction of abortion was considered justifiable, because it was effected to save the life of the mother. The permission of inducing premature labour was also extended to those cases where disease was to be alleviated, which could only be checked for a time. They, therefore, sacrificed the embryo to the interest of the mother, although

the advantage to the mother was but of short duration. But, is not an extreme degree of the narrowness of the pelvis, which prevents parturition most dangerous to the mother? and by what other means can this morbid condition be relieved, unless by the induction of abortion? Besides this, the mother is most desirous to have an abortion induced, that she may escape the fatal dangers and the horrid pains of the Cæsarian section. Why should we hesitate in this case to destroy the child, where our object must be permanently to preserve the life of the mother, and why should we not respect her just claims.

If we continue as we have done so far, to suppose the possibility that the mother will refuse to submit to the Cæsarian section, must we not favour the induction of abortion the more so, as we receive of late, and particularly from France, through the Medical Journals, frequent reports of favorable results?

Thus, Dubois, Cazeaux, Lénor have several times induced premature labour with success, and even all three on the same individual, (Julie Gross), without her having been threatened by any danger. And the accoucheurs who did not hesitate to induce abortion, would really have had no reason to oppose the same as a dangerous means of relief.

We shall now examine abortion, by enumerating its advantages and casual disadvantages without any prejudice, shall compare the results of this examination with the objections of the opponents of abortion, and try to defend it against the latter.

We may mention first, as a matter of course, that when abortion is induced, which, as we shall show hereafter, ought to be done in the first six months, all the dangers, which, without this relief, threatened the mother at the end of her pregnancy, are at once removed. In what follows, we think, however, that we have specially and sufficiently explained the advantages of induced abortion.

The induction of abortion, as well as that of premature labour, is a painless and easy operation, which, compared with the operations mentioned heretofore, is *without danger*, and can be easily executed by any accoucheur. This operation may indeed be called without danger, as it is performed without any sharp instruments which threaten laceration, and as the interference

with the uterus, called for by abortion, can be gradual and gentle.

Moreover, abortion, differing from all other operations, has the advantage that it can be effected upon all constitutions. Even the utmost degree of narrowness of the pelvis is no obstacle, because we possess numerous means of inducing abortion, all gentle applications, and because we are not obliged to introduce voluminous instruments through the straits of the pelvis. On the other hand, the embryo, at the time favorable for abortion, is so little developed, that it will easily pass through the straits of the pelvis if the indications are correct.

The pelvis furnishes the exact indications, for when it is so narrow as to require the Cæsarian section, it also indicates induced abortion; and it cannot be avoided when the mother is opposed to the Cæsarian operation. For the latter operation, for craniotomy, and induced premature labour, we have certain scales to show when these operations are possible, we, therefore, should also state what measurement enables us, by the induction of abortion in the different months, to save the life of the mother. As soon as the shortest diameter of the pelvis is less than $2-2\frac{1}{2}$ ", induced abortion is indicated, and can be justified only when the pregnancy has not yet reached the seventh month. We think it therefore most advisable to induce abortion at the end of the sixth month, when the dimension of the pelvis justifies it, it not being entirely impossible, as experience teaches us, that the foetus may be brought into the world alive and be saved. If however, the pelvis is narrower, we must unconditionally induce abortion in an early month of pregnancy. After having determined one of the limits, where abortion might take place, we have now to show, how large the pelvis may be to indicate this operation unconditionally and under all circumstances. We know from experience that a pelvis, the shortest diameter of which is less than $2\frac{1}{2}$ in., makes parturition altogether impossible without destroying the life of the child by craniotomy, or that of the mother by the Cæsarian section, or at least endangering that of the latter greatly, and there is no doubt that where the pelvis is as narrow as this, the induction of abortion is indicated under all circumstances. For this reason we should not hesitate to subject all patients, even those who

are pregnant for the first time, to this operation, after we had convinced ourselves of the narrowness of the pelvis, and by measurement, had found the shortest diameter $2\frac{1}{2}$ ". We should do so particularly with women, whose natural labour, in consequence of the narrowness of the pelvis, had been interfered with, and which had always terminated in the death of the child.

As to the time when artificial abortion is to be induced, we lay it down as a first principle :

We must be careful not to induce abortion when the child is already so far developed that its size surpasses the dimensions of the pelvis.

If we want to form a table showing the time when according to the dimensions of the pelvis, abortion should be induced, the following will be about correct.

From preparations in rectified spirits :

Duration of Pregnancy in weeks.	Transverse dia- meter of the head.		Greatest trans- verse diameter.	
	Inches	Lines	Inches	Lines
In the 10—12	—	10—11	1	—
12—14	—	11	1	3
14—16	1	2	1	5
16—18	1	4	1	9
18—20	1	9	2	—
20—22	1	10	2	1
22—24	1	11	2	3
24—26	2	2	2	6
26—28	2	6	2	9
28—30	2	7	3	—
30—32	2	9	3	2
32—34	3	1	3	4
34—36	3	2	3	5
36—38	3	3	3	6
38—40	3	4	3	8—11

In the skeleton :

Duration of Pregnancy.		Transverse Diameter.	
		Inches	Lines
		—	10
Weeks	12	—	10
"	15—16	—	11—12
Months	4	1	1
Weeks	17	1	4
"	21—24	1	6
Months	9	3	3

These measurement are the results of examinations of preparations of the Anatomical and Obstetrical Cabinet at Tübingen. The highest and lowest proportions are given.

We must admit that the measurement is less perfect, than if it had been made on fresh embryos. Those of Table I, were made on preparations in spirits of wine, and those of Table II, on skeletons; nor can we answer for the correctness of the reports of pregnancy.

Such statistics might be called pedantic, yet we think that for praictioners of less experience it may form a certain basis; for the transverse diameter, which is the most important in obstetrics, is found, as far as we remember, only for premature and natural labour, for abortion no measurements are extant. But in most cases of narrowness of the pelvis, it is the antero-posterior diameter which is shortened. On entering the strait of the pelvis the head is generally placed so that its transverse diameter (bi-parietal diameter) corresponds with this antero-posterior diameter of the pelvis and for this very reason the knowledge of the transverse diameter is of most importance, to solve the above problem. It must however not be overlooked that in collecting the indications for induced abortion, not only the length of the most shortened diameter is to be considered, but we must also keep in view the transverse diameter and the form of the whole pelvis, as well as the dimensions of its different portions.

Let us see what has been objected to all these advantages of abortion.

The incorrectness of the objection that abortion cannot be induced *with all constitutions*, is apparent, when on examing the foregoing tables, we find that when the induction takes place in proper time, there is no disproportion between the size of the child and of the pelvis. Besides, we have striking cases on record, that where the life of the mother would have been lost without abortion, the latter produced no great effect upon the organism of the mother, and could be performed without injuring her in the least.

Erroneously, the opponents of abortions want to deduce the danger of this operation, from the hemorrhages which follow. It cannot be denied that abortion is always accompanied by the loss

of blood, and that the uterus, particularly at the time when it is very hyperæmic, allows no inimical interference. But that we can calculate upon the danger of these hemorrhages only in rare cases, is shown in embryology. According to the latter, in the first months of pregnancy, the whole cavity of the uterus is lined with the decidua vera, which afterwards forms the placenta materna. This membrane is entirely filled with capillary vessels and through them is in close contact with the uterus. If in this condition an abortion takes place, that portion of the decidua which surrounds the ovum, becomes detached, and the latter is expelled together with its envelopes. The remainder of the decidua still adheres to the uterus, and on its internal surface parenchymal hemorrhage takes place. This hemorrhage, however, can only become dangerous when it continues for a long time, but generally will not be found as copious as hemorrhages at the physiological discharge of the mature placenta. But when this part is still partially forming, the hemorrhage, of course, must be much more considerable, as it does not only arise from the decidua, but also from the utero-placental vessels, and as the portion of the placenta, on account of its closer connection with the uterus, parts from it with much greater difficulty; this state continues to the fifth month of gestation, and explains why the hemorrhage is most dangerous between the third and fifth months. Anatomically, we might suppose, that the dangers of the hemorrhages increased as pregnancy approached its termination, because vessels with larger orifices must discharge a greater quantity of blood, in a certain given time, than those which resemble capillary vessels. The vessels are large, the parietes are relatively thicker, and by this means the parts of the placenta more intimately connected with the uterus than when the parietes of the vessels are thin.

It is correct, that the contractability of the uterus increases as the foetus becomes more and more developed, and having expelled it, is able to detach the placenta and expel it also, and to close the orifices of the vessels; but that at the beginning or towards the middle of pregnancy, the contractive power of the uterus should be so trifling as to leave the placenta behind, must be denied. For how could it be otherwise explained that in menstruation

and in spontaneous abortion with labour-like phenomena the contents of the uterus are voided? That the danger is but trifling, is further proved by the observations and results of induced premature labour and of spontaneous abortion or miscarriage. Thus Professor Breit, whilst I acted as his assistant, induced 17 premature labours in the Tübing hospital, without a single considerable hemorrhage taking place, whilst it is a much more frequent attendants on natural labour. A case which occurred in 1853 in the obstetrical clinic also goes to confirm the above.

BÜCHELE, aged 31, healthy, strong, fair-haired, of plathoric complexion, having menstruated for the first time at the age of 15; had had a child three years ago, and was admitted on the 27th June 1853 with slight uterine contractions. Last menstruation, the 11th December 1852; conception the 20th December. The fundus of the uterus in the umbilical region, to the left above, a round part, which was taken for the head. Increased secretion and raised temperature of the Vagina. The inferior portion of the uterus descending far into the cavity of the pelvis, the canal of the neck of the uterus 10 lines long, spongy, with a funnel-shaped opening, admitting the point of the forefinger to the internal os uteri.—The latter still closed. Treatment: none, except lying down quietly.—On the 29th cessation of contraction, the 2nd July, commencement of contraction; the internal os uteri opened to admit the point of the forefinger. No part of the child presenting. In the evening at 8 o'clock sudden discharge of about one ounce of blood. Some minutes after slight pains and expulsion of a putrid invested foetus. The uterus as voluminous as before, towards the left and above, still a round hard body. Auscultation shows distinctly the heart—beat of a second child. By an internal examination, nothing was found but the half expelled foetus, opium in refract. dos. The expelled foetus is not removed. Abatement of the contractions, no discharge of blood, quiet sleep during the night.

On the 5th July, at 6 o'clock A. M. wakes up suddenly, a few violent pains, the waters break, expulsion of a living foetus, after some strong pains. Now only the dead child is removed. The two placentas come away spontaneously after about a minute. Very strange, *no hemorrhage whatever*. On the 8th plentiful secre-

tion of milk. No reaction. Puerperium entirely normal (Journal of the obstetric clinic No. 1204.)

But if in abortion, they fear hemorrhages, because they believe that the uterus has not yet attained the highest degree of dilatation and therefore the greatest contractility, they disregard the general principle, that in enormous dilatation of the uterus (by too large a foetus, with twins, or a great quantity of the liquor amnii) the most violent metrorrhages occur, they being a natural consequence of the atony of the uterus.

Also the dangers of the *Placenta* remaining behind in the cavity of the uterus, have been exaggerated by former authors, for the most dangerous consecutive hemorrhages of which a mother ever died, were, no doubt, caused by a *placenta prævia*.

But if this is not the case, experience furnishes us with many remedies, which if they are applied at the proper time, may be relied upon, and we may trust the more to these remedies, the contractility of the uterus not having been reduced to the lowest degree, as is the case in natural labour, when there is enormous expansion.

The rare occurrence of considerable hemorrhages, as well as the easy detaching of the placenta in abortion, are distinctly shown by our experience in spontaneous abortions and induced premature labour. It has always been observed, that the discharge of the placenta, is not only not delayed, but, in most cases, is effected with great ease.

That the hemorrhages in case of abortion are not so formidable, is sufficiently proved by the fact, that frequently women (particularly unmarried ones) in whom the too frequent coition destroys the work of love, miscarry spontaneously with so much facility, that the whole occurrence appears to them as a profuse menstruation, and that they continue to attend uninterruptedly to their daily avocations.

Respecting the termination of the puerperium, we refer to general experience. Spontaneous abortion and induced premature labour show, that the puerperium terminates more favorably under these circumstances.

It is true, that in a great majority of cases, the foetus is sacrificed by abortion; yet there are several cases where the child

even very early, (in the sixth month, was viable and could be preserved.

In the induction of abortion, it is, however, by no means immaterial, in what manner nature is compelled to perform this act. It should only be stimulated in a mild and careful manner, so that abortion may resemble natural labour as much as possible. The best way to obtain the object would probably be, to proceed as in the induction of premature labour.

I. PREPARATION :

Baths, opening medicines, injections, venesection, (irritation of the mammæ by blisters?) Circular friction of the fundus uteri.

II. THE INDUCTION ITSELF.

- a) Rupturing the membranes, (method of Scheele.)
- b) Gradual dilatation of the os uteri by means of a sponge.
(Method of Brunninghausen, Kluge.)
- c) Plugging of the vagina. (Schöller.)
- d) Injections into the vagina by the ascending douche.
(Kiwisch.)
- e) Injections into the uterus. (Kohen.)
- f) Galvanism.
- g) Medicines: *Secale cornut.* borax, extract. of *belladonnæ*, *hb. sabinæ* etc.

Besides the above methods, different nations have different ways of inducing premature labour. Thus Dr. Aslar in Mexico (*Odjaca*) says, that the women there make a person knead their abdomen with his fists until labour pains follow. Similar manipulations, though of a milder character, such as tightly bandaging the abdomen ect. and called *Ampoekoe*, occur also among the Asiatic nations. The latter method is said to have lately been frequently applied with success and strongly recommended by Dr. Lachenmaier, Philad'a.

After having enumerated the medical reasons, which prove that abortion is necessary, we shall appeal to *moral theology*, to show also from this point of view, that our therapeutic, unavoidable operation is a justifiable action.

That the killing of the foetus by abortion was allowed in the Pagan world for material reasons, that the philosophers of these nations differed as to whether abortion should be approved or not, that a difference was made between foetus animatus and non-animatus, and other historical arguments, we may pass over in silence; for modern times, looking upon *the moment of animation as identical with that of conception*, must follow different principles.

When in the Christian world the question as to the admissibility or disapprobation of abortion began to be mooted, three different opinions prevailed among the disputants.

One of these theories has died since, for no body now belongs to the party, which indeed allowed the killing of the embryo, but only on condition that it had been baptized.

In Tertullian, who to this day, has had but few followers, we have a defender of abortion in cases where *the welfare of the mother requires it*. Lactantius, Justinus, Athenagoras, St. Thomas, Augustin are the principal defenders of the Tertullian decision.

Diametrically opposite to the Tertullians we find a sect, whose numerous adherents, totally condemn *the abortion as an infanticide*, and who obstinately rely upon holy writ. The watch-word of this strict party is:

“*Ne occidas*,” and the well-known saying

“*Non facienda mala, ut eveniant bona*.”

For our purpose, it would be well to allow abortion and modify the fifth commandment, the special argument being: Nature offers anomalies, which can only be corrected by art, *so that one being is sacrificed to save the other*.—And here we have only to choose between the Cæsarian section, which according to the medical part of this treatise, would be synonymous with the *death of the mother and abortion* at most craniotomy, that is killing of the foetus. Art can only save *one* being, the other must perish, occiditor. The fifth commandment however says: “*ne occidas*.”

But medical science *cannot* obey, and according to the legally recognized greater value of the mother's life, when compared with that of the child, must sacrifice the latter for the sake of the former. Another war-cry, with which the moralists of those times attack the defenders of abortion is in the views of Paul: *Non facienda mala, ut eveniant bona* (to the Romans III. 8). The refutation of this sentence resembles that which has for an object the modification of the fifth commandment. We again stumble upon the Cæsarian section and abortion. Suppose the mother submitted to the former — an hypothesis which we have hitherto rejected, — and we are at once threatened again with the fifth commandment; but no body, who knows its results will think it strange when we look upon this operation as a *malum*. Consequently this operation also would be inadmissible according to the above principle, which would say to us: "*Non facienda mala (Cæsarian section) ut eveniant bona*" (preserved embryos). Therefore the Cæsarian section would not be allowed either, and that puts an end to the theory of these moral skeptics. If we are not allowed to kill the child, nor to perform the Cæsarian section, we again come under the law, "*ne occidas*" and now much more seriously, for there is no doubt, that without one of these operations, both mother and child must perish; experience, alas! has proved this most incontrovertibly. By thus adhering too strictly to this severe moral code, we should burden our conscience with a two-fold homicide.

To form a legal opinion on the subject before us, we must lay down the following principle.

Every individual has a right to seek and to promote his own welfare as long as this can be done without infringing the laws of the land. According to the idea of positive right, every thing must be considered as allowed, which the law of the land does not seem to prohibit. But that which is allowed, forms a right within the province of the law. From this we necessarily deduce that the realization of our welfare, as long as it remains within the limits of the law, is not only allowed, but becomes *a right of itself*. In the same manner as an individual may seek his welfare in promoting *his own interest*, he may do the same in promoting that of *others*, having also a right to do this within the limits of the law of the land. But we must never for a moment lose sight of the principle laid down in law, that *no good intention can ever justify an unnatural action*. Although the ultimate object of an action may be ever so good, it becomes a crime if the action itself is unlawful; and the supposed good intention is no plea in mitigation of the punishment—a principle we find distinctly laid down in the criminal code of Wurtemberg, Art. 55.

"The unlawfulness of the intention is excluded neither by the illusion that the action, prohibited by law, was allowed by conscience and religion, nor by the ignorance as to the manner and magnitude of the punishment, nor by the nature of the *motive or object* of the deed."

The only exception as to actions which are contrary to the statute law is formed by *duress*.

According to some authors, as Kostlin: New Revision, § 154; Abegg's Lehrbuch, § 107 and 108; Abegg: Untersuchungen, § 107, ff.; 180 and f.; 279 and 340 ff.; the law of self-defence is solely limited to the case between *life and a subordinate right*, (that of property). But all the modern criminal codes have abandoned this limited idea, wherefore it would be useless to enter further upon its origin. By the new criminal codes, the law of self-defence is also recognized, in case of a collision *between life and life*; and every unwarranted action, even a homicide, is justifiable, and, therefore, not punishable, if it was committed in such a

situation, and under such circumstances, where the perpetrator *could save his own life only in committing the act.*

The criminal code of Wurtemberg, Art. 106, goes still farther, and admits the law of self-defence, not only for the preservation and saving of an individual's own life, *but also for the preservation of the lives of his relatives in a descendant and ascendant line—his sisters, brothers, wife or husband.*

“Who, besides, in the case of self-defence, has committed an unlawful act, to turn away an immediate, pressing danger, which threatened his own life or the lives of his relatives in an ascending or descending line, that of his brother or sister, wife or husband, is not punishable; but it shall be his duty to inform either the injured party or the authorities of the injury done.” (*Criminal code, Art. 106.*)

This *extended* idea of the law of self-defence, as represented by our modern criminal codes, and, among others, by that of Wurtemberg, has also been adopted by the majority of our legal authors, and they try to defend it against the above-mentioned limitation; and, from a practical point of view, there is but little doubt that it is correct.

The extension of the right of self-defence, where equal rights (life against life) come into collision, is based upon the feeling which is rooted in the breast of every one, and in the consciousness of its justice, to preserve our own life at any price, and in any manner, even at the cost of another's life.

The right of *self-preservation* has been given to us by nature; it is deeply implanted in the human heart. It gives to the individual the right to use all possible means for the preservation of his own life, a right which exists independent of every statute, and is found in nature itself. Every legislative body must acknowledge this right, which is natural, which is innate in man, unless it wants to conflict with natural feelings, or desires to look at mankind from a point of view which represents them as ideal, but by no means as they really are. A legislature which calls upon a citizen entirely and positively to sacrifice himself for the preservation of another, would plainly pre-suppose a heroism which looks very well on paper, but which, in the actual condition of mankind,

occurs very rarely, and is, perhaps, never met with in common life. But as it is exactly upon this common life, or, we may say, upon the nature of men, that a rational, practical code of laws should be founded; and as laws are not made for ideal beings and heroes, but for men such as they are, every legislative body, if it desires to be recognized and esteemed by the mass of the people, must respect human nature, must not resist the innate and rooted laws of the heart of man, or it will never be successful; it will become an illusion, when opposed to those natural rights which will maintain themselves, even against the letter of the law.

Such a power, based upon the innate right of human nature, *is the natural right of self-preservation*, to acknowledge which, is the duty of every rational legislature, and which our modern framers of penal codes of law have felt and said, admitting unconditionally the law of self-preservation, even in a collision between life and life.

After having stated the general principles from which we have to start, if we want to solve the question "*whether abortion, in cases where it is positively indicated, is allowed or not,*" we may enter into the particulars of the subject, and examine the points of law which bear upon it.

Starting from the principle that no good whatever can ever justify an *unlawful* act, we must, of itself, declare abortion as criminal; for, as the realization of the welfare of the mother is only a right as long as this right does not infringe the prohibition of the law, and as the induction of abortion is decidedly such an infringement, the good intention of saving the life of the mother will not do away with the illegality of the act. We have, therefore, but one means left to justify abortion—that is, we consider it as a right of *self-preservation*. Every where, where we find an actual case of self-preservation, the realization of the welfare of the individual, though another right should be infringed by it, *becomes itself a right*, and by placing abortion among the means of self-preservation, we should at once exclude the idea that the same was unlawful, and, consequently, punishable.

All depends, therefore, upon the question, whether it can be

legally justified to classify abortion as one of the means of self-preservation.

If we adopt the narrow idea of the right of self-defence, according to which the same is only applicable when life comes in collision with an inferior right, it will appear, at first sight, that the right of self-preservation, when speaking of abortion, would be out of the question. If we suppose that, *at the time when abortion is induced, the foetus is actually alive*, we have here a case where life comes in collision with life; which, of course, excludes the idea of the right of self-preservation—the latter being never admissible in a collision of *equal* rights, but only when a greater right comes in collision with a lesser. But, on closer inspection, we find that this is only *apparently* so. If we consider more accurately the actual and legal circumstances, as given in a case where the abortion is positively indicated, there can be no doubt that the relation is the same as in collision between life and property; that, in fact, two not *equal rights* are opposed to one another, but that a *weaker right* comes in contact with a *stronger*. The life of the mother, namely, appears a *real* life, that of the foetus only a *possible one*. For as the foetus has not yet obtained that conformation and development to enable it to sustain life *independently*, we can only look upon it as a *possible life*, which, in law, cannot, by any means, be considered of equal value with the real life of the mother. Also, the Roman law is in favor of regarding the foetus as a being *inferior* to the mother.

L. 151 D. de inspiciendo ventre 254. "Partus enim, antequam edatur, mulieris portio est vel viscerum."

It is true that, originally, induced abortion was looked upon as *immoral*, yet there appears to have been no prohibiting law against it during the whole time of the republic. Not until the time of Septim. Severus was the act made criminal, punishable by temporary exile, because, as *res mali exempli*, and an infringement of the rights of man against the foetus, they desired to make the offence penal.

The canon law, no doubt, occupied quite another position, as also, the penal law. They look upon the offence of causing abortion decidedly as a *homicide*; because, by this means, a human

being growing into existence is thereby destroyed, and deprived of *the benefit of baptism*.

„Stem so jemandt eynem Weibsbild durch bezwang, essen oder trincken eyn lebendig Kindt abtreibt, wer mann oder weib unfruchtbar macht, so solch übel fürsezlicher und bößhafter weis beschicht, soll der mann mit dem schwert als eyn todtschläger und die frau, so sie es auch an ihr selbst thette, ertrenkt oder sunst zum Todt gestrafft werden. So aber eyn Kind das noch nit lebendig war, von eynem weibsbild getrieben würde, sollen die urtheyler der Straff halber bei den rechtverständigen radts pflegen.“ (Penal Code, Art. 133.)

Translation.

“And if any body, by force, meat, or drink, shall cause an abortion of a living child, whoever makes man or woman sterile, (unfruitful,) and this offence is committed intentionally and maliciously, the man, as a homicide, shall suffer death by the sword; and the woman, although she has committed the offence on her own person, shall be drowned, or put to death some otherwise. But if an abortion has been caused on a woman before the child was alive, the umpires shall take advice with those knowing in the law.”

Besides this, they entertain the strange opinion *that the embryo did not become animated until forty or eighty days after conception*, and distinguished between *fœtus animatus* and *non-animatus*, the penal law looking upon an abortion of the fœtus non-animatus as an *attempt* at the offence; but for an abortion of the fœtus animatus they made the penalty the same as that of *murder*, whilst the canon law made it equal to that of *infanticide*.

But, in our modern codes of law, we find again the principle, that it would not be equitable to allow the fœtus the same rights as to the child already born, *in rerum natura*, and to suppose an actual killing of the embryo, for which reason they do not look upon an induced abortion of the fœtus as a homicide, or equal to infanticide, but as a *peculiar independent crime*. (Wurtemberg Penal Code, Art. 253, 255.)

From all this, it appears that the neglect of the fœtus in favor of the mother is also well founded in law, and is perfectly justified, as well by the Roman as by our modern law. The most re-

spectable lawyers of modern times, also, have given it as their decided opinion, and defended it, that the embryo, in opposition to the mother, has *fewer rights*; for which reason they have decidedly declared *craniotomy* on the living child as admissible.*

But if it is true that we cannot consider the *rights* of the foetus equal to those of the mother, then equal rights no longer come in collision in abortion, but one that is *stronger*, and the other, which is *weaker*; for which reason, the right of self-preservation, even in its limited sense, becomes applicable here.

From the second point of view, supposing an actual collision between the life of the mother and that of the child, there can be no doubt of the existence of the right of self-preservation, as in this case we have also admitted the right of self-preservation where equal rights are opposed to one another, in such a manner that only the one can be preserved, at the expense of the other.

But, if where artificial abortion is decidedly indicated, we can only preserve one life at the expense of the other, *will this really prove the mother under duress?*

Whenever the narrowness of the pelvis is such that the foetus, as soon as it reaches a certain state of development, can no longer be brought into the world in the *natural* way, we must, in most cases, look upon the death of the mother as *certain and unavoidable*, as soon as the time has been allowed to go by, up to which the natural condition, that is, the partial development, of the foetus would have allowed its passage through the pelvis. In fact, the danger which threatens the life of the mother *exists already*, at the moment of conception; conception itself is the beginning of that event, which will undoubtedly put an end to the life of the mother, if the blow is not parried in time. But in all those cases where the pelvis is so very narrow that the foetus, as soon as it is developed to a certain degree, can no longer be ushered into the world in the natural way, *this can only be done by abortion*. For if the foetus has once surpassed this state in which parturition can take place in the natural manner, the life of the mother

* Martin, Lehrbuch § 115. No. 4. Wächter, Lehrbuch, II., S. 120, 121; particularly Köstlin's neue Revision, § 154 Note, and Jenall in Wagner's Zeitschrift 1826, P. 313—320.

may be considered as lost, simply because, in consequence of the narrowness of the pelvis, there is no other means of delivering the woman, unless by the Cæsarian section. This operation, however, as we have shown in the medical part, in most cases, causes the death of the mother with certainty, and we, therefore, cannot look upon it as a means of saving, but rather as a means of sacrificing the mother.

But it is certain that in all the cases where induced abortion is distinctly indicated, there are but two ways of saving the mother; namely, by inducing abortion in time, or by relying entirely upon the *Cæsarian section*. It proves that the mother, at the period when abortion may still be induced successfully, is *actually under duress*, on account of the great fatality of the Cæsarian section. We must, therefore, if the natural development of the foetus proceeds uninterruptedly, look upon the mother as threatened by *certain death*, from which she can only escape by the timely induction of abortion; and, as the mother is possessed of the natural right of self-preservation, of which she can only avail herself at the expense of the life of the foetus with certainty, we must consider the mother as under *duress*, and allow her the exercise of the right of self-preservation, to the fullest extent, in the induction of abortion. If we were to exclude the application of abortion because the Cæsarian section might be still possible, we should really value the actual life of the mother less than the mere possible life of the child, by exposing the life of the mother to certain death, and thus sacrifice her to the, by no means certain, preservation of the child. By this means we should, however, positively annul the right of self-preservation.

But the mother, being in *rerum natura*, has a positive right to the preservation of her life, and is by no means obliged to resign it to bring into existence a merely possible right. On the contrary, our statute laws decidedly give her the right, in case of *duress*, to preserve her own life at the expense of another life—therefore, also, at the expense of that of the child. And as this self-preservation, in our case, can only be effected with certainty by the timely induction of abortion, there can be no longer any doubt as to the lawfulness of this expedient.

But whether the mother wishes to avail herself of her right to preserve her life at the expense of that of her child, or whether she prefers to risk her life by submitting to the Cæsarian section, *depends upon her own free will*, and a conscientious physician can do no more in this case than to give her a clear and distinct idea of the dangers of the Cæsarian section, to enable her to come to a considerate determination. If she decides in favor of the Cæsarian section, the physician, of course, has no right to induce abortion.

If, on the contrary, the mother desires to avail herself of her right *to preserve her own life at the expense of that of her child*, the next question is, whether, in consequence of the *duress* of the mother, the physician is authorized to render his assistance, and to induce abortion. Our statutory law does not contain any positive decision on this subject. The penal law only allows the husband and parents to assist the threatened wife or child.

The new code of laws extends the exercise of self-preservation to the preservation of the ascending and descending line of relations, to brothers and sisters, to wives and husbands. (V. Article 106.

According to this, we should strictly deny the physician the right to induce abortion, unless he happened to stand in one of the above relations to the mother. But the reason of the above limitation, no doubt, is, that in our law of self-preservation, or self-defence, this right is admitted where life comes in collision with life, where it might be hazardous to extend this right of defence of the person in duress to any third individual. These scruples, however, will vanish entirely. We may consider that the law, in framing the above Art. 106, lost sight of our case altogether, and had no idea of applying to it the same limitation; as, otherwise, the admission of the right of self-preservation in the mother under *duress* would be a mere chimera; as she herself cannot apply the means necessary to avail herself of her right, and as, also, her relations, in most cases, would not be able to assist her. Besides, the basis of the right of self-preservation is so very general, that we cannot see why it should not entitle a third person to interfere for the well being of the individual under *duress*.

If we admit, therefore, that the mother is really under *duress*, we must consistently also allow the physician to exercise the right of preservation, because otherwise the whole right would be an illusion, as neither the mother nor her relations are in a situation to procure and to apply the necessary means to exercise her right of self-preservation. But as in Art. 106 the exercise of the right of self-preservation has been decidedly acknowledged, it must consistently also declare, the means which makes its exercise as possible, as admissible.

These means for exercising this right of preservation however are only to be found in the science of medicine, and the physician must therefore have the right of delivering the mother from the collision, which endangers her life, always supposing that the situation of the mother is such as legally to justify the execution of this right of self-preservation, and that the physician can be accused neither of fraud nor of guilt.

The circumstance that the physician is not himself under *duress* can be no motive to exclude his active assistance; for he is only *the means and the tools* of which the mother makes use to realize her right; *the mother is the actually acting person*, she causes the abortion, the physician, properly speaking, is only *the right hand*, the *medium* by which the mother strives to preserve her own life and thus exercises her *right*.

Finally we must observe, that according to the letter of our penal law which under pain of punishment, wherever the right of self-preservation has been exercised, insits upon notice being given to either the injured party, or to the authorities, *notice should also be given to the authorities wherever an abortion has been caused*, to avoid being subject to this punishment.

If we cast a cursory glance at what has been stated, we must necessarily come to the conclusion that we dare not reject the induced abortion. We have seen that the Cæsarian section is so dangerous that it costs the lives of two thirds of the women, who submit to it, that embryotomy is equally dangerous with a diameter of $2\frac{1}{2}$ ", that none of the other obstetrical operations is practicable. If in such a case, on account of anatomical and pathological proportions, craniotomy is also impracticable, there would remain nothing left but the Cæsarian section, and in case the mother

will not submit to it, we must either let mother and child perish, or have recourse to a less dangerous operation, to abortion. That a dissection of the mother would be a piece of barbarity, we have shown above. But as induced abortion must produce the most favorable results, as it always applicable, and besides leaves us some room to hope for the preservation of the foetus, we should always recommend it:

- a. Whenever the mother refuses to submit to the Cæsarian section.
- b. When embryotomy is not practicable, with a narrowness of the pelvis of less than $2\frac{1}{2}$ ".

Perhaps it might be suggested, that induced abortion might lead to a train of abuses, but this difficulty can be easily obviated by providing that, when induced abortion becomes necessary, several other able accoucheurs are to be called in.

As to the *morality* of the act, according to strict principles, no unity of opinion will ever be obtained. Yet, let any moralist be placed in the peculiar position of the accoucheur, and feelings of humanity will prompt him to allow abortion.

In a legal point of view, we have every where seen induced abortion allowed, where a real case of *duress* could be proved. When *duress* is a matter of fact, the physician is allowed to render assistance to the mother under *duress* by the induction of abortion. Liable to punishment, he would only become, if he were guilty of carelessness, or worse, if he were to pretend such a condition, to obtain some unlawful end. Nay, in cases where abortion seems to be called for, the physician has no right to refuse his assistance, by excusing himself with the provisions of the penal code. For according to these very provisions, the physician *is obliged*, when circumstances require it, to induce abortion, because he is in duty bound to apply all the means, which according to the rules of his sciences, and the circumstances of the case may be required. By neglecting this duty and refusing his assistance, the physician would come under the provisions of the

Wurtemberg code of laws § 640.

"If publicly appointed physicians, surgeons, midwives and apothecaries in urgent cases shall refuse to give assistance, or medicines and shall thereby injure somebody's health, parties so offending shall pay a fine of one hundred florins or less, and in grievous cases, shall be temporarily, and in case of a repetition of the offence, shall be permanently deprived of the privilege of exercising their profession."

ERRORS.

Page 12 Line 3 from above, read "the pelvis and *the* head" for the pelvis and head.

" 15 " 12 " below, " "ductile" for doctile.

" 15 " 5 " " " "osteomalacia" for osteomacia.

" 31 " 17 " above, " "are possible *and* therefore," for are possible, *we*,
therefore.

" 36 " 6 " " " "Tübingen hosp." for Tubing hosp.

" 36 " 2 " below, " "came" for come.

" 38 " 1 " above, " "month,) was" for month, was.

" 39 " 1&2 " below, " "occiditur" for occiditor.

" 42 " 9 " below, " "founded" for found.

" 45 " 12 " above, " "meal" for meat.

" 46 " 16 " " " "But, *when* artif. etc." for But, if where art.